

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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In the Matter of)	
)	
Procedures to Govern the Use of Satellite)	IB Docket No. 02-
10		
Earth Stations on Board Vessels in the)	
5925-6425 MHz/3700-4200 MHz Bands and)	
14.0-14.5 GHz/11.7-12.2 GHz Bands)	
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REPLY OF INTELSAT, LTD.

Intelsat, Ltd. (“Intelsat”) hereby replies to the oppositions and other comments filed in response to the petitions for reconsideration of the Report and Order in the above-captioned proceeding.¹

I. THE COMMISSION SHOULD REJECT THE FWCC PETITION.

In the *ESV Order*, the Commission established licensing and service rules for Earth Stations on Vessels (“ESVs”) that are carefully tailored to permit introduction of ESVs while protecting terrestrial fixed service (“FS”) networks operating in the same bands. The Commission’s rules strike an appropriate balance between the interests of ESV and FS

¹ *Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in the 5925-6425 MHz/3700-4200 MHz Bands and 14.0-14.5 GHz/11.7-12.2 GHz Bands*, Report and Order, IB Docket No. 02-10, FCC 04-286, rel. Jan. 6, 2005 (the “*ESV Order*”).

operators.² The proposals of the Fixed Wireless Communications Coalition (“FWCC”) to further restrict C-band ESV operation are based on an overly-pessimistic characterization of the efficiencies that can be achieved in coordination under the framework established by the Commission.³ As explained by Maritime Telecommunications Network, Inc. (“MTN”), the FWCC’s arguments either ignore or dismiss many operational conditions imposed on ESV operations to protect FS operations.⁴ The Commission should reject the FWCC’s proposals.

II. THE COMMISSION SHOULD ADOPT PROPOSALS THAT WOULD PROVIDE FLEXIBILITY TO ESV OPERATIONS CONSISTENT WITH THE PROTECTION REQUIREMENTS OF ADJACENT SATELLITES.

The Commission’s rules adopted in the *ESV Order* generally address well the protection requirements of adjacent fixed-satellite service (“FSS”) operations. However, the petitions for reconsideration filed in this proceeding included various proposals that would eliminate arbitrary disparities in the services that can be offered by ESV operators, and would increase flexibility in the design and operation of ESV terminals, while continuing to provide adequate protection to FSS (or FS) operations. The

² See Opposition and Comments of Intelsat, Ltd., IB Docket No. 02-10, April 21, 2005 (“Intelsat Opposition”), at 2-3; Consolidated Opposition and Comments of Maritime Telecommunications Network, Inc. on Petitions for Reconsideration and Clarification, IB Docket No. 02-10, April 21, 2005 (“MTN Opposition”), at 3.

³ See Intelsat Opposition at 3.

⁴ MTN Opposition at 3.

comments filed in this proceeding demonstrate industry consensus on many of those proposals.

First, there is broad support for Boeing's proposal that the Commission permit ESVs to operate at power levels exceeding the off-axis equivalent isotropically radiated power ("EIRP") density envelopes adopted in *ESV Order*, so long as the higher levels are consistent with the coordinated parameters of the serving satellite, as demonstrated by certain additional showings in the operator's application to the Commission. All parties commenting on the Boeing proposal supported it, and the Commission should incorporate it into its rules for ESVs.⁵

On the other hand, there is resounding opposition to PanAmSat's proposal to eliminate the off-axis EIRP density limits in favor of separate requirements on off-axis antenna gain and power density at the input of the earth station.⁶ As noted by Intelsat and Boeing, after

⁵ Intelsat Opposition at 10-14; MTN Opposition at 3, n.7; Partial Opposition and Comments of PanAmSat Corporation, IB Docket No. 02-10, April 21, 2005 ("PanAmSat Opposition") at 2, 7-8; Consolidated Opposition to Petitions for Reconsideration or Clarification and Comments of the Boeing Company, IB Docket No. 02-10, April 21, 2005 ("Boeing Opposition") at 2, 8; and Opposition to Petition of PanAmSat Corporation for Reconsideration or Clarification of ARINC Incorporated, IB Docket No. 02-10, April 21, 2005 ("ARINC Opposition") at 1, n.1.

⁶ ARINC Opposition at 2-3; Boeing Opposition at 3, 6-7; MTN Opposition at 4. The FWCC stated that it supported PanAmSat's proposal, but provided no explanation whatsoever of how the proposal would benefit FS operations in any way. Opposition to Petition for Reconsideration of the FWCC, IB Docket No. 02-10, April 21, 2005 ("FWCC Opposition") at 2. In fact, the off-axis EIRP density limits were adopted to protect adjacent FSS satellites, and not FS operations. *See* Intelsat Opposition at 11.

PanAmSat made its proposal for separate limits on input power and antenna gain, the Commission proposed in the *Part 25 Streamlining* proceeding to apply the off-axis EIRP density envelope approach to other kinds of FSS earth stations,⁷ and that approach should be maintained for ESVs.⁸

Most parties agree that the Commission should not eliminate a mispointing requirement, as ARINC had proposed. As Intelsat pointed out, mispointing was not taken into account in the derivation of the EIRP envelopes, and if the envelopes were now interpreted to themselves limit mispointing variations, as ARINC seemed to suggest, the overall off-axis constraints on ESVs would be increased beyond those already determined in the *ESV Order* to protect adjacent FSS satellites.⁹ Boeing indicated that the $\pm 0.2^\circ$ mispointing limit is a requirement of Resolution 902 (WRC-03), which should be recognized.¹⁰ PanAmSat and MTN also strongly opposed the ARINC proposal.¹¹

⁷ See 2000 Biennial Regulatory Review – *Streamlining and Other Revisions of Part 25 of the Commission’s Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network Earth Stations and Space Stations*, Sixth Report and Order and Third Further Notice of Proposed Rulemaking, IB Docket No. 00-248, FCC 05-62, rel. March 15, 2005, ¶¶ 1, 72-92.

⁸ See Intelsat Opposition at 16; Boeing Opposition at 7.

⁹ Intelsat Opposition at 16-17.

¹⁰ Boeing Opposition at 3.

¹¹ PanAmSat Opposition at 4; MTN Opposition at 4.

However, as Intelsat suggested in its comments, and Boeing and PanAmSat discussed in theirs, there are a variety of alternative ways to incorporate and enforce a mispointing requirement that would provide additional flexibility to ESV operations. These would further the ARINC goal of increased flexibility in mispointing, while protecting adjacent satellite networks.

As part of a proposal to bring the ESV rules in line with approaches recently embraced in the *Part 25 Streamlining* proceeding, Intelsat proposed relaxing the off-axis EIRP density envelope to include the effects of the $\pm 0.2^\circ$ mispointing currently permitted under Commission rules, and then requiring that compliance with the envelope be evaluated taking into account any mispointing. This was proposed specifically in order to place a cap on mispointing effects, so that in extending the start of the envelope along the lines of the approach being followed in the *Part 25 Streamlining* proceeding, uncertainties in mispointing would not necessitate conservative assumptions in the amount by which the start of the envelope could be extended.¹² Intelsat believes that this approach will give ESV operators maximum flexibility without compromising the protection to adjacent satellites afforded in both this and the *Part 25 Streamlining* proceedings.

¹² In that proceeding, the start of the envelope was selected conservatively, to take into account the fact that mispointing was not limited, and could be as high as $0.4\text{-}0.5^\circ$. See Intelsat Opposition at 22, n.63.

Boeing has a different approach to handling mispointing, which, under certain assumptions, can be seen as equivalent to aspects of Intelsat's proposal. Boeing proposes that mispointing not exceeding the $\pm 0.2^\circ$ mispointing currently permitted by the Commission be considered *de minimis* and permitted, but that any mispointing beyond the $\pm 0.2^\circ$ limit must be compensated for by a tightening of the off-axis EIRP density envelope.¹³ Boeing's approach does not require re-defining the reference for the off-axis angle, as in the case of Intelsat's proposal.

Intelsat agrees that Boeing's proposal would be an acceptable approach to enforcing the mispointing requirement, so long as it is clear that tightening of the envelope is required *only* if an operator elects to operate under a mispointing allowance greater than $\pm 0.2^\circ$, and *only* if the tightening of the envelope required in such cases corresponds to the amount required to maintain equivalence with a $\pm 0.2^\circ$ mispointing allowance, and not the amount corresponding to no mispointing at all. In other words, the tightening of the envelope should be proportional to the mispointing *in excess of* $\pm 0.2^\circ$. Like the Intelsat approach, Boeing's method would place a strict cap on the effects of mispointing, which would allow the Commission to then start the envelope at a larger off-axis angle than contemplated in the *Part 25*

¹³ Boeing Opposition at 5-6. PanAmSat also makes a new proposal that appears to share certain concepts with Boeing's proposal. PanAmSat Opposition at 5. However, Boeing's proposal appears simpler to implement, and Intelsat's comments in this Reply focus only on the Boeing proposal.

Streamlining proceeding, as proposed by Intelsat, without compromising the protection of satellite networks in a two-degree spacing environment.

On a separate point, Intelsat supported Boeing's request for clarification that the requirements for compliance with the aggregate off-axis EIRP density envelope should not be interpreted to require use of equal EIRP density per earth station. However, Intelsat urged that an applicant proposing to use variable power levels be required to demonstrate on the record how compliance with the envelope would be monitored and achieved. Intelsat therefore agrees with PanAmSat's comments, which further demonstrate the need for a detailed showing on the complex power management measures that will be required in order to comply with the aggregate off-axis EIRP limits when variable EIRPs are employed.¹⁴

Intelsat also supported PanAmSat's proposal to require ESV applicants to utilize an automatic antenna pointing mechanism capable of achieving and maintaining the required antenna pointing accuracy. MTN similarly agreed with PanAmSat's proposal, with certain qualifications on the technical showing that would be required.¹⁵ Intelsat supports MTN's approach, which would clarify the essential elements of the showing required, and avoid the need to possibly disclose proprietary information.

III. CONCLUSION

¹⁴ PanAmSat Opposition at 3.

¹⁵ MTN Opposition at 4.

For the above reasons, the Commission should deny the FWCC Petition. However, the Commission should adopt certain proposals of Intelsat, Boeing, PanAmSat and MTN, as identified and discussed in the Intelsat Opposition and herein, in order to provide ESV operators maximum flexibility consistent with the protection requirements of FS operations and adjacent FSS satellites.

Respectfully Submitted,

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CERTIFICATE OF SERVICE

I, Derrick Johnson, do hereby certify that on this 4th day of May 2005, I sent via electronic mail a true and correct copy of the foregoing Reply of Intelsat, Ltd. to the following:

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